

Outline for April 19, 2005

1. Expressive power
 - a. Simulation of multiparent joint creates by 2-parent joint creates
 - b. Monotonic ESPM, monotonic HRU equivalent
 - c. Safety question in ESPM decidable if acyclic attenuating scheme
2. Comparing Expressive Power of Models
 - a. Graph representation
 - b. Go through 3-parent joint create as simulated by 2-parent joint create
 - c. Correspondence between two schemes in terms of graph representation
 - d. Formal definition of scheme A simulating scheme B
 - e. Model expressive power
 - f. Result: monotonic 1-parent models less expressive than monotonic multiparent models (so ESPM more expressive than SPM)
3. Typed Access Matrix Model
 - a. Add notion of type for entities—set of types T , set of subject types $TS \subseteq T$
 - b. New create rules: specify subject/object type
 - c. In command, child type if something of that type created; otherwise, a parent type
 - d. Show type graph and cycles in it
 - e. Safety decidable for systems with acyclic MTAM schemes
4. Policy
 - a. Define *security policy*, *secure system*, *breach of security*
 - b. Security models
 - c. Confidentiality, integrity policies; distinguish from military, commercial policies
 - d. Role of trust in modeling
 - e. DAC vs. MAC vs. ORCON

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